PATENT COOPERATION TRACTY

PCT

| REC'D | 18 | AUG | 2004 |
|-------|----|-----|------|
| WIPO | | | PCT |

INTERNATIONAL PRELIMINARY EXAMINATION REPORT (PCT Article 36 and Rule 70)

| Applicant's or agent's file reference | | t's file reference | FOR FURTHER ACT | ION See Notification | on of Transmittal of International xamination Report (Form PCT/IPEA/416) | |
|---------------------------------------|-------------------|--------------------|---|--|---|---|
| | | | | | | |
| Interna | ational | applic | ation No. | International filing date (da | y/month/year) | Priority date (day/month/year) |
| PCT/ | GB 0 | 3/016 | 514 | 15.04.2003 | | 15.04.2002 |
| | ational D7/12 | | t Classification (IPC) or t | ooth national classification and | IPC | |
| Applio ENS | | SYST | TEMS LIMITED | | | |
| 1. | This I | Intern ority a | ational preliminary exe and is transmitted to th | amination report has been e applicant according to Ar | prepared by this Int ticle 36. | ternational Preliminary Examining |
| 2. | This | | | of 5 sheets, including this | | |
| | | hoor | amonded and are the | anied by ANNEXES, i.e. she basis for this report and/oon 607 of the Administrative | r sheets containing | otion, claims and/or drawings which have rectifications made before this Authority rr the PCT). |
| | Thes | e anr | nexes consist of a tota | l of 2 sheets. | | |
| - | | | | | | |
| 3. | This | repor | t contains indications | relating to the following iter | ms: | |
| | ı | Ø | Basis of the opinion | | | |
| | 11 | | Priority | | | |
| | 111 | | Non-establishment | of opinion with regard to no | velty, inventive step | p and industrial applicability |
| 1 | IV | | Lack of unity of inve | | | |
| | V | × | Reasoned statemen | | n regard to novelty, tement | inventive step or industrial applicability; |
| | VI | | Certain documents | cited | | |
| | VII | | Certain defects in th | e international application | | |
| | VIII | | Certain observations | s on the international applic | cation | |
| | | | | | | |
| Date | e of sub | omissi | on of the demand | | Date of completion o | of this report |
| 14. | 11.20 | 03 | | | 18.08.2004 | |
| Nam preli | ne and iminary | / ехал | ng address of the internat | | Authorized Officer | J. I. |
| - | 16. | NI. | ıropean Patent Office - P 2280 HV Rijswijk - Pay | s Bas | Verhoef, P | |
| | | Te | el. +31 70 340 - 2040 Tx: ex: +31 70 340 - 3016 | 31 651 epo nl | Telephone No. +31 | 70 240-4235 |
| · - | | | DC 101 70 0 10 0010 | | relephone 140. To 1 | 70 340 4200 |

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/GB 03/01614

| I. Basis d | f the | report |
|------------|-------|--------|
|------------|-------|--------|

1. With regard to the **elements** of the international application (Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17)):

| | Des | scription, Pages | | | | | |
|--|--|--|--|--|--|--|--|
| | 1-1 | 6 | as originally filed | | | | |
| | Claims, Numbers | | | | | | |
| | 1-1: | 5 | filed with telefax on 30.03.2004 | | | | |
| | | | | | | | |
| | Dra | wings, Sheets | | | | | |
| | 1/4- | 4/4 | as originally filed | | | | |
| 2. | Wit lanç | h regard to the langu guage in which the int | age, all the elements marked above were available or furnished to this Authority in the ternational application was filed, unless otherwise indicated under this item. | | | | |
| | The | ese elements were av | ailable or furnished to this Authority in the following language: , which is: | | | | |
| | | the language of a tra | anslation furnished for the purposes of the international search (under Rule 23.1(b)). | | | | |
| | | | | | | | |
| | | the language of a tra Rule 55.2 and/or 55. | anslation furnished for the purposes of international preliminary examination (under 3). | | | | |
| 3. With regard to any nucleotide and/or amino a international preliminary examination was carried | | | ectide and/or amino acid sequence disclosed in the international application, the examination was carried out on the basis of the sequence listing: | | | | |
| | □ contained in the international application in written form. | | | | | | |
| | ☐ filed together with the international application in computer readable form. | | | | | | |
| ☐ furnished subsequently to this Authority in written form. | | | | | | | |
| | | \Box furnished subsequently to this Authority in computer readable form. | | | | | |
| | The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished. | | | | | | |
| | | The statement that the listing has been furn | he information recorded in computer readable form is identical to the written sequence ished. | | | | |
| 4. | The | The amendments have resulted in the cancellation of: | | | | | |
| | | the description, | pages: | | | | |
| | | the claims, | Nos.: | | | | |
| | | the drawings, | sheets: | | | | |
| | | | | | | | |

INTERNATIONAL PRELIMINARY **EXAMINATION REPORT**

International application No.

PCT/GB 03/01614

| 5. 🗆 | This report has been established as if (some of) the amendments had not been made, | since they | have |
|------|--|------------|------|
| · – | been considered to go beyond the disclosure as filed (Rule 70.2(c)). | | |

(Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)

6. Additional observations, if necessary:

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)

Yes: Claims No:

1-15

Inventive step (IS)

Yes: Claims

11 13

No: Claims

Claims

1-10 12 14-15

Industrial applicability (IA)

Yes: Claims

1-15

No: Claims

2. Citations and explanations

see separate sheet

International application No. PCT/GB 03/01614

Re Item V

Reasoned statement with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

The examination is being carried out on the following application documents:

Text for the Contracting States:

AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HU IE IT LI LT LU LV MC MK NL PL PT RO SE SI SK TR

Description, pages:

as originally filed

Claims, No.:

1-15

with telefax of

30/03/2004

Drawings, sheets:

1/4-4/4

as originally filed

1. Reference may be made to the following documents:

D1: EP-A-0 165 734 (BANK OF ENGLAND) 27 December 1985 (1985-12-27) D2: EP-A-0 527 285 (KOENIG & BAUER AG) 17 February 1993 (1993-02-17)

- 2 The present application does not meet the criteria of Article 33(1) PCT, because the subject matter of claims 1 - 10, 12, 14 and 15 does not involve an inventive step in the sense of Article 33(3) PCT.
- 2.1 The document D1 is regarded as being the closest prior art to the subject matter of independent claim 1 and discloses (the references in parentheses applying to this document):

A method of detecting unauthorised copies of a genuine document (cf. page 1, lines 7 - 16; page 2, lines 2 - 10), comprising the steps of computing a characteristic derivable from a set of documents that are known or can be assumed to be largely genuine (cf. page 1, lines 16 - 22); analysing the profiles to assess the probability that any given document within the set, or additional to it, is in fact genuine (cf. page 21, lines 30 - 36; page 22, lines 6 - 10; page 23, lines 14 *- 22*).

Document D1 does neither directly nor indirectly reveal the following feature:

• the characteristic being associated with the output of a printer that prints genuine documents and not being intrinsic to the original document

The problem solved by this feature is the determination of the origin of any document.

The concept of determining the origin of a document based upon the characteristics being associated with the output of a printer is known from detective novels, e.g. Agatha Christie.

If the person skilled in the art would like to know the origin of a document, he would use the teaching of document D1, where genuineness of documents are determined by comparing them on a pixel against pixel basis with a 'master document'. The master document would be based, using the teaching of well-known detective novels, upon a set of documents printed on the genuine printer, and therefore having the characteristics being associated with the output of a printer that prints genuine documents.

The subject matter of independent claim 1 is therefore not inventive as is required by Article 33(3) PCT.

- 2.2 The dependent claims 2 10, 12, 14 and 15 do not contain any features which, in combination with the features of any claim to which they refer, meet the requirements of the PCT in respect of inventive step.
 - The subject matter of the dependent claims 2 10, 12, 14 and 15 is therefore not inventive as is required by the Article 33(3) PCT.
- 3. The combination of the dependent claims 11 and 13 with the features of the claims they refer to, is neither known from, nor rendered obvious by, the available prior art.

10

25

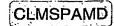
30

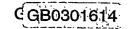
CLAIMS

- 5 1. A method of detecting unauthorised copies of a genuine document, comprising the steps of:
 - (a) computing profiles of a printing characteristic derivable from a set of documents that are known or can be assumed to be largely genuine, the characteristic being associated with the output of a printer that prints genuine documents and not being intrinsic to the original document;
 - (b) analysing the profiles to assess the probability that any given document within the set, or additional to it, is in fact genuine.
- 2. The method of Claim 1 in which the characteristic is the degree of print diffusion on line edges.
 - 3. The method of Claim 1 in which the characteristic is the degree of line fragmentation.
- 20 4. The method of Claim 1 in which the characteristic is the degree of edge deformation.
 - 5. The method of Claim 1 in which the characteristic is the configuration of pixels.
 - 6. The method of Claim 1 in which the characteristic is the orientation of glyphs.
 - 7. The method of Claim 1 in which the profile is represented in a histogram.
 - 8. The method of Claim 7 in which the profile is represented as a first derivative of the histogram.
 - 9. The method of Claim 1 in which profile related data is written into the document.

5

10





18

- 10. The method of Claim 1 in which the profile is generated and updated as a consequence of large numbers of printed documents being regularly analysed.
- 11. The method of Claim 10 in which the document is a cheque.
- 12. The method of Claim 1 in which the original is accurately printed in a controlled environment and the profile is generated using occasional samples.
- 13. The method of Claim 12 in which the document is currency, a driving license, ID, or a passport.
 - 14. The method of Claim 1 in which the original is modified by including a special printed feature designed to facilitate profile comparison.
- 15. The method of any preceding Claim comprising the steps of generating a mean value for several profiles and determining the distance from this mean of each of a large number of sample documents, so that any counterfeit documents in the sample fall outside of the distance distribution associated with authentic documents.